

Date: Wednesday, 3/26/2008 1:26:38 PM
 User: Kim Johnston

Process Sheet

Split

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: ROUND BILLET 17-4
Job Number	: 38212	Part Number	: D6104007
Estimate Number	: 10041	Drawing Number	: D6104 REV B
P.O. Number	:	Project Number	: N/A
This Issue	: 3/26/2008 S.O. No. :	Drawing Revision	: B
Prsht Rev.	: NC	Material	:
First Issue	: 1/1 Type : MACHINED PARTS	Due Date	: 4/4/2008
Previous Run	: 37966A	Qty:	10 Um: Each
Written By	:		
Checked & Approved By	: <u>1080326</u>		
Comment	: Est. A: 01.05.08 New Issue EC		

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description:

10

PG

PURCHASING



Comment: PURCHASING

Issue P/O: 5994

C 208103126

a) Description: S.S round billet

b) Ø4.50" x 5.10" long

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630)

e) One blank makes 2 parts

f) Material certification required

(10)

20

D6104007P

17-4 SS Roundbar 4.50"OD



Comment: Qty.: 1.0000 Each(s)/Unit Total: 10.0000 Each(s)

17-4 SS Roundbar 4.50"OD

30

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

1080326 (8)

40

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6104

1080326



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Johnston

Process Sheet

er: CU-DAR001 Dart Helicopters Services

Drawing Name: ROUND BILLET 17-4

Part Number: D6104007

umber: 38212

mber:



Seq. #:

Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

06/08/08/27

(8)

6.0

QC21

FINAL INSPECTION/W/O RELEASE



08/08/27

Comment: FINAL INSPECTION/W/O RELEASE

MF 08-08-27

Job Completion





**OUTO
KUMPU****Certificate of Test**

64256

* CERTIFICATION *

HEAT 517575

ORDER 0501350/007 SON 32593D BOL 0149188 TAG 1916219 04/30/08

----- YOUR ORDER & DATE -----
21163-OP 4/30/08 CUST# UNAIWR01 CUST TAG#11904505----- ITEM DESCRIPTION -----
GRADE 17-4
Size 17-4 HRART RND BAR 4-1/2 STD
Ship Condition A
Country of Melt: SWE
Country of Mfg.: USA
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 685

----- SPECIFICATIONS -----
MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED FROM SWEDEN
AMS 2303E AMS 5643R
ASME SA564 TYPE 630 B04 A05 ASTM A484 06B
ASTM A564 04 TYPE 630 ASTM B112 96
ANNEAL 1900F/30MIN/RAPID COOL UNS S17400, AISI 630
ESP/UNALLOY-IWRC MS-SS1 REV 3 NO WELD REPAIR
FREE OF MERCURY CONTAMINATION----- MECHANICAL & OTHER TESTS -----
Test Condition H900
Hardness as shipped 279 HBW Hardness as tested 400 HBW
Hardness as shipped (29 HRC) Hardness as tested (43 HRC)
Grain size 5.5 Tensile strength, KSI (MPa) 198.0 (1365)
Micro OK 0.2% Yield strength, KSI (MPa) 177.0 (1220)
Intergranular corrosion OK
Macro OK
Elongation % in 4D 12.0
Reduction of area % 42.0
Ferrite .0
Hardenability HRC 43----- CHEMICAL COMPOSITION -----
Carbon (C) .010 Manganese (Mn) .740
Phosphorus (P) .022 Sulphur (S) .024
Silicon (Si) .430 Chromium (Cr) 15.450
Nickel (Ni) 4.740 Cobalt (Co) .028
Copper (Cu) 3.260 Moly (Mo) .190
Nitrogen (N) .029 Columbium (Cb) .300
Titanium (Ti) .005 Aluminum (Al) .003
Tin (Sn) .005 Boron (B) .001
Tantalum (Ta) .005 Vanadium (V) .044
Columbium/ Tantalum (Cb+Ta) .305
Iron (Fe) Balance
Frequency .000 Severity .000
Melt Practice EAF
Refining Practice AOD
De-long Ferrite

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes.

We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

Outokumpu Stainless Bar, Inc.
3043 Crenshaw Pkwy.
Richburg, SC 29729

M.F. Marcanio, Quality Manager

M.F. Marcanio

